

Remarks

Claims 50-53 and 55-59 remain pending in the application. No new matter has been added by this amendment.

Claim Rejections – 35 U.S.C. § 103(a) – Lai et al

Claims 50-53 were rejected under 35 U.S.C. §103(a) as being unpatentable over Lai et al. in combination with Singer et al.

Applicant appreciates that the Examiner has recognized the deficiency that Lai et al. does not employ SDS in the in vivo experiments, as Applicant previously indicated. Lai et al does not teach or suggest the use of SDS, at any concentration, for an in vivo application as provided in claim 53. Applicant agrees with Examiner's new statement that "Lai et al teach a method of cellular disruption using photosensitizing agent (column 6, line 36 to column 19, lines 67)."

A prima facie case of obviousness has not been established. MPEP 2142. To establish prima facie obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). The combination of the Lai and Singer would fail to teach or suggest each of the following steps:

applying a concentration including a combination of SDS and a photosensitizing agent to the area of cell activity, wherein the SDS is provided in a solution having an SDS concentration range of between 0.003 % to 0.01%, and wherein the SDS disorients a cell membrane so that said membrane no longer functions as an effective osmotic barrier;

passing the photosensitive agent through a disoriented cell membrane and into a cell interior; and

applying light to the photosensitive material within the cell interior to cause photodynamic cellular disruption.

Neither Singer nor Lai et al. disclose, teach or suggest the claimed step of using SDS within the defined concentration to disorient a cell membrane so that the cell membrane no longer functions as an effective osmotic barrier and then passing a photosensitive material through a disoriented cell membrane and into a cell interior.

Singer does not disclose or suggest the use of SDS to permeabilize a cell membrane prior to introduction of a photosensitive material into the cell interior.

While it was well known to use the solubilizing properties of SDS to aid in the delivery of a pharmaceutical agent (Singer, pp. 110-111), there is no teaching in Singer to use the SDS concentration as claimed to breach cell membranes followed by an introduction of a photosensitive material into the cell interiors via the breached membranes.

Claim Rejection: 35 U.S.C. §103 –Swartz Asculai Singer Williams

Claims 50-53, 55 and 57-59 were rejected under 35 U.S.C. §103(a) as being unpatentable over Swartz et al in combination with Asculai et al, Singer et al, and Williams et al.

There is no motivation to combine Swartz with Singer. Gyenge et al, submitted with this response in an accompanying Information Disclosure Statement, teaches away from the combination of Swartz and Singer.

An important object of Swartz is the provision of a system capable of generating hydrogen peroxide (H^2O^2). Col. 3, lines 36-37. “An important aspect of the invention is that of activating oxygen to its excited electronic and electrically reducible states to provide singlet oxygen...and hydrogen peroxide. Col. 4, lines 45-51. Swartz discloses an applied electric field between a cathode and anode to produce hydrogen peroxide via an electroreduction process. Col. 5, line 30 through Col. 6, line 59, and FIGS. 1 and 3.

Gyenge et al teaches away from the combination of SDS with the electroreduction apparatus of Swartz, as SDS retards electroreduction of O^2 to hydrogen peroxide in an analogous system. See, Abstract, Page 239, Col. 2, Page 241, Col. 1. It would not have been obvious to the artisan of ordinary skill in the art to employ a surfactant, particularly SDS, in the method of

Swartz et al since this would interfere with the production of hydrogen peroxide via electroreduction as taught by Gyenge. There is no suggestion or motivation to combine Swartz and the surfactant, SDS, as the proposed modification would render the prior art invention unsatisfactory for its intended purpose. If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *See*, M.P.E.P §2143.01, citing *In re Gordon*, 733 F2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Reconsideration of these rejections is requested.

Claim Rejection: 35 U.S.C. §103 –Swartz Asculai Singer Williams Lai

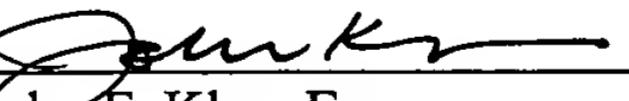
Claim 56 was rejected under 35 U.S.C. §103(a) as being unpatentable over Swartz et al in combination with Asculai et al, Singer et al, and Williams et al as applied to claims 55 and 57-59 above, and further in view of Lai et al.

For the reasons identified above with reference to claims 50-53, 55 and 57-59 above, it is submitted that this rejection of claim 56 is improper. There is no suggestion or motivation to modify Swartz to include the surfactant, SDS. Reconsideration of this rejection is requested.

Please direct any questions regarding this application to John Klos at (612) 321-2806.

Respectfully submitted,
Merrill A. Biel, and Advanced
Photodynamic Technologies, Inc. by their
attorneys

Dated: July 27, 2004

By: 

John F. Klos, Esq.
Registration No. 37,162
Fulbright & Jaworski L.L.P.
80 South Eighth Street, Suite 2100
Minneapolis, MN 55402-4320
Telephone: (612) 321-2806